

1. (Previously Presented) A miniature fan or micro-fan which comprises a fan housing (22; 68; 112; 150) through which a substantially annular air duct (114; 152) extends in the axial direction,

there being arranged in a central region of the air duct (114; 152) a carrier hub (64; 118; 156) which carries the internal stator (72; 122) of an electronically commutated external-rotor motor (28, 30; 70; 158; 202) whose external rotor (80; 160), equipped with at least one permanent magnet (86), carries an impeller wheel (130; 162) that is arranged rotatably in the air duct (114),

and comprising a circuit board configuration (32; 90, 94; 134; 163)

- which comprises a motor region (34; 42) that is arranged in the central region of the air duct between the carrier hub (64; 118) and the internal stator (122), and carries at least one galvanomagnetic rotor position sensor (36; 44) that is controllable by the magnetic field of the permanent magnet (86) provided on the external rotor,

- which comprises a component region (50; 138) for the reception of electronic components (96; 170) of the external-rotor motor, which component region is arranged on said fan housing (22; 68) substantially outside the air duct (114; 152); and

- which comprises a bridge portion (40; 48; 136; 174) by way of which the motor region (163) of the circuit board configuration is electrically connected to the component region (168), said bridge portion extending from said motor region through the annular air duct (114; 152) to said component region (50; 138).

2. (Original) The fan according to claim 1, wherein the motor region, bridge portion, and component region are implemented as parts of the same circuit board.

3. (Previously Presented) The fan according to claim 1, wherein the circuit board is implemented at least locally in flexible fashion.

4. (Original) The fan according to claim 3, wherein the flexible region is deflected between the motor region and component region.

5. (Previously Presented) The fan according to claim 1, wherein the circuit board configuration comprises flexible stranded conductors in the bridge region between the motor region and component region.

6. (Previously Presented) The fan according to claim 1, which is implemented as an axial fan.

7. (Previously Presented) The fan according to claim 1, wherein the internal stator is implemented with claw poles (74; 124) and an annular winding (76; 126; 164).

8. (Original) The fan according to claim 7, wherein the annular winding (76; 126; 164) is electrically connected to the motor region of the circuit board configuration.

9. (Previously Presented) The fan according to claim 1, wherein the component region (138; 168) is arranged substantially in a closed-off region (98; 142; 172) of the fan housing (22; 68).

10. (Previously Presented) The fan according to claim 9, wherein the closed-off region is sealed, in liquid-tight fashion, by means of a cover (100; 172).

11. (Original) The fan according to claim 10, wherein the component region (94) of the circuit board configuration is mounted on the cover (100) by means of at least one support member (102).

12. (Previously Presented) The fan according to claim 1, which is controllable via a data bus.

13. (Previously Presented) The fan according to claim 1, wherein a bridge portion (40, 48; 136) of the circuit board configuration (32; 90, 94; 134; 163) extends in the region of a strut, the latter connecting the external-rotor motor (28, 30) to the fan housing (22).

14. (Previously Presented) A miniature fan or micro-fan which comprises a fan housing (22; 68; 112; 150) through which a substantially annular air duct (114; 152) extends in the axial direction, that housing being connected via at least one carrier member to a carrier hub (64; 118; 156)

that is arranged in a central region of the air duct (114; 152) and carries the internal stator (72; 122), comprising an annular winding (76; 126; 164) and implemented as a claw-pole stator, of an electronically commutated external-rotor motor (28, 30; 70; 158) whose external rotor (80; 160), equipped with at least one permanent magnet (86), carries fan blades (130; 162) that are arranged in the air duct (114),

and comprising a circuit board configuration (32; 90, 94; 134; 163)

- which comprises a motor region (34; 42) that is arranged on the radially inner side of the air duct between the carrier hub (64; 118) and the claw-pole stator (122), is adapted for electrical connection to the annular winding (76; 126; 164) of the claw-pole stator, and carries at least one galvanomagnetic rotor position sensor (36; 44) that is controllable by the magnetic field of the at least one permanent magnet (86) provided on the external rotor,

- which comprises a component region (50; 138) for the reception of electronic components (96) of the external-rotor motor, which component region is arranged substantially outside the air duct; and

- which comprises a bridge portion (40; 48; 136; 174) by way of which the motor region (163) of the circuit board configuration is electrically connected to the component region (168), said bridge portion extending from said motor region (163) through the annular air duct (114; 152) to said component region (168) of the circuit board.

15. (Original) The fan according to claim 14, which is implemented as an axial fan.

16. (Previously Presented) The fan according to claim 14, wherein

the component region (138; 168) is arranged substantially in a closed-off region (98; 142; 172) of the fan housing (22; 68).

17. (Previously Presented) The fan according to claim 16, wherein the closed-off region is sealed, in liquid-tight fashion, by a cover (100; 172).

18. (Original) The fan according to claim 17, wherein the component region (94) of the circuit board configuration is mounted on the cover (100) by means of at least one support member (102).

19. (Previously Presented) The fan according to claim 14, which is controllable via a data bus.

20. (Currently Amended) The fan according to claim 1, wherein the circuit board extends in a component region (138; 168) in a direction running substantially parallel to a ~~direction~~ longitudinal axis of said substantially annular air duct (114; 152).

21. (Currently Amended) The fan according to claim 14, wherein the circuit board extends in a component region (138; 168) in a direction running substantially parallel to a ~~direction~~ longitudinal axis of said substantially annular air duct (114; 152).